



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/542,219

07/14/2005

Kazuyoshi Saito

6268-005/NP

1745

27572 7590 03/10/2009
HARNESS, DICKEY & PIERCE, P.L.C.
P.O. BOX 828
BLOOMFIELD HILLS, MI 48303

EXAMINER

KIM, WESLEY LEO

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

03/10/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/542,219	Applicant(s) SAITO ET AL.	
	Examiner WESLEY L. KIM	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 10-12, 14-17 is/are rejected.
- 7) ☒ Claim(s) 4,9,13 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to Amendment filed on 11/21/08.

- Claims 1-2, 4-9, 11, and 14-18 are currently amended.
- Claims 1-18 are pending in the Current Office Action.
- This Action is made FINAL.

- Arguments regarding non-amended Claims 1, 3, 5-7, 10 and 14-16 were not persuasive.

- Arguments regarding amended Claims 2-3, 8, 11, and 17 did not overcome the prior art.

- Arguments regarding Claims 4 and 13 were persuasive and are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

2. Applicant's arguments filed 11/21/08 have been fully considered but they are not persuasive.

- Applicant argues that the subject matter described at page 5, line 1, to page 6, line 19, of the Specification as originally filed has never been admitted as prior art by the applicant.

The examiner respectfully disagrees. The examiner notes that just because the subject matter in pages 5-6 are in the background, this is not the only reason

Art Unit: 2617

why this is considered prior art. In pages 1-6 including 5-6, it is clear that the subject matter discussed in the note pages are directed towards concepts which are well known in the art, but have some sort of known problem. Descriptions of concepts known to have a problem associated with it are considered prior art.

That is exactly why the present invention at hand seeks to overcome or supplement the problems and deficiencies of what is already known with Claim 2 (See arguments (mailed 11/21/08) Page 19 lines 1-5).

- Applicant argues that the limitation of “each time simultaneously commencing the transmissions of said selected data packets by the MIMO”.

In response, the examiner notes that this was newly added by the amendments and is taught by the combination of references as can be seen in the rejection of Claim 11.

- Applicant argues that Odman appears to teach an offset rather than the time when the acknowledgement is actually transmitted.

The examiner respectfully disagrees. The offset is calculated so that the transmitter knows when to transmit the ACK (Par.123). Therefore this is an indication (i.e. time) of when the acknowledgement should be sent.

Drawings

3. The Drawings submitted on 11/21/08 regarding Claims 17-19 have been received and are accepted.

Art Unit: 2617

4. Figures 20-21 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. The Figures are described in the Background so they should be labeled as prior art.

Claim Objections

5. Claims 10-11, 14-17 are objected to because of the following informalities: It is unclear what STA is. If STA is an Acronym or shorthand for another term, it should be spelled out at least once within the Independent Claim before being utilized throughout the claims for purposes of clarity. Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. Claim 2 recites the limitation "each time simultaneously" in the last two lines of the claim. There is insufficient antecedent basis for this limitation in the claim. Claim 2 recites various times; it should be made clear which "time" the applicant is referring.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2617

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (10/542219).

Regarding Claims 1 and 10, Applicants Admitted Prior Art (AAPA) teaches a wireless packet communication method of transmitting data packets by use of radio channels which are determined to be idle by carrier sense (Col.1:lines 12-15), among more than 3 stations (STAs) in which a plurality of radio channels are available (Page.1:lines 12-16, a plurality of radio channels are available but only one channel can be used together at different times by a plurality of STAs, which can obviously be more than 3 STAs), characterized by comprising: individually managing, for each receiver terminal (Page.5:line 11, respective STAs), a plurality of types of available transmission rates (Page.5:lines 11-13) to be used for transmission of said data packets (Page.5:lines 11-18, the transmission rates of each receiver is managed and appropriate packets are selected for transmission to the respective receiver terminals); when there are a plurality of data packets to be transmitted onto a transmission buffer (Page.5:lines 13-16, there are plurality of data packets since plurality of packets are being waiting to be selected for transmission), referring to packet sizes representative of data amounts of the respective data packets and to transmission rates of the respective data packets associated with receiver terminals (Page.5:lines 11-13, packet size and transmission rates), checking packet time lengths of the respective data packets (Page.5:lines 11-13,

Art Unit: 2617

packet time lengths), and selecting said plurality of data packets whose packet time lengths are approximately equal to each other regardless of their receiver terminals (Page.5:lines 13-16), the packet times lengths being transmission times defined by the packet sizes and transmission rates (Page.5:lines 11-13); and simultaneously commencing the transmissions of said plurality of selected data packets by use of a plurality of radio channels (Page.5:lines 13-16), however the Applicants Admitted Prior Art **does not expressly teach** determining when it is possible to transmit said plurality of data packets simultaneously by use of a plurality of radio channels.

AAPA does teach that it is well known in the art that one radio channel can be determined to be idle prior to transmitting data packets (Page.1:lines 12-24) and the AAPA teaches that it is known that data packets may be simultaneously transmitted through different radio channels (Page.5:lines 22-25). By the combination of both teachings it is obvious that a skilled artisan would envision determining when it is possible to transmit a plurality of data packets simultaneously by use of a plurality of radio channels (i.e. determining when the plurality of radio channels are idle) so that the plurality of data may be transmitted to the destination without collisions.

To one of ordinary skill in the art, it would have been obvious to modify AAPA such that a determination is made as to when it is possible to transmit a plurality of data packets simultaneously by use of a plurality of radio channels, to provide a method where the plurality of data may be successfully transmitted to the destination without collisions with on-going transmissions on any of the plural radio channels.

Art Unit: 2617

9. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (10/542219) in view of Odman (U.S. 2003/0210710 A1) and Brockmann et al (U.S. 2003/0133469 A1).

Regarding Claims 2 and 11, AAPA teaches transmitting a plurality of data packets by MIMO (Fig.17, multiple input and multiple output) via a plurality of radio channels (Fig.17 and Page 2:lines 22-25, ch.1 and ch.2) among more than three stations (STAs)(Fig.17: there are 3 stations) including receiver terminals which can perform the MIMO on a plurality of signals for one radio channel (Fig.17 and Page 2:lines 12-14), comprising:

individually managing, for each of the receiver terminals, a plurality of types of available transmission rates to be used for transmission of said plurality of data packets (Page.5:lines 11-18, the transmission rates of each receiver is managed and appropriate packets are selected for transmission to the respective receiver terminals);

determining a packet size (i.e. data size) of each of the plurality of data packets and determining transmission rate of each of the plurality of data packets to be transmitted to an associated terminal of the receiver terminals (Page 5:line 11), wherein the packet size indicates data amount of the data packet (Page 5:lines 12-13, packet size is determined),

determining a packet time length of each of the plurality of data packets, wherein the packet time length is transmission time defined by the packet size and

Art Unit: 2617

the transmission rate of the data packet (Page 5:lines 12-13, packet time length is determined by data size and transmission rates) and

selecting, from said plurality of data packets, data packets whose packet time lengths are approximately equal to each other regardless of the associated receiver terminals of the selected data packets (Page.5:lines 13-16). AAPA teaches that one radio channel can be determined to be idle prior to transmitting data packets (Page.1:lines 12-24) and AAPA further teaches that it is known that data packets may be simultaneously transmitted through different radio channels (Fig.17 and Page 2:lines 22-25, ch.1 and ch.2). Therefore it is obvious to transmit a plurality of data packets simultaneously by use of a plurality of radio channels (i.e. determining when the plurality of radio channels are idle by carrier sense) so that the plurality of data may be transmitted to the destination without collisions. However **AAPA does not expressly teach** determining when the receiver terminals of the data packets transmit acknowledgment packets from the packet time lengths of said data packets and the packet time lengths of acknowledgment packets, wherein the packet time lengths of the acknowledgment packets are calculated from the transmission rates of the data packets associated with destinations.

Odman teaches determining when the receiver terminals of the data packets transmit acknowledgment packets from the packet time lengths of said data packets and the packet time lengths of acknowledgment packets (Par.119 and Par.123, the ACK-time offset is the time to send the ACK), wherein the packet time lengths of the acknowledgment packets are calculated from the transmission rates of the data

Art Unit: 2617

packets associated with destinations (Par.119:lines 6-8), wherein the acknowledgment packet transmission time indicates when the receiver terminals of the selected data packets are allowed to transmit the acknowledgment packets (Par.123). It is obvious that the acknowledgement packet transmission times would apply to the simultaneous transmissions as taught by AAPA (Fig.17 and Page 2:lines 22-25, ch.1 and ch.2). Therefore it would have been obvious to modify AAPA with Odman at the time of the invention to inform the receiver when to send the ACK so that collisions and interference is reduced with respect to other transmissions. However, **the combination of AAPA and Odman does not expressly teach** storing, in each of the selected data packets, information of acknowledgment packet transmission time and information of a transmission deferral duration, NAV, wherein the NAV is a period of time taken for completion of transmissions of acknowledgment packets to all of data packets simultaneously transmitted.

Brockmann teaches storing, in each of the selected data packets, information of acknowledgment packet transmission time and information of a transmission deferral duration, NAV, wherein the NAV is a period of time taken for completion of transmissions of acknowledgment packets to all of data packets simultaneously transmitted (Par.8, the ACK frame is NAV protected and received in the preceding data frame). Therefore it would have been obvious to modify AAPA and Odman with Brockmann at the time of the invention so that other transmissions are not attempted, thereby minimizing collisions and interference during the transmissions.

Art Unit: 2617

10. Claims 3, 5-7, and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (10/542219) in view of Kazumasa et al (JP 2003-110575).

Regarding Claim 3, 5-7, and 14-16, AAPA teaches all the limitations as recited in claim 1, however AAPA **does not disclose** switching over to lower transmission rates when selected packet length times are associated with transmission rates lower than a current transmission rate.

Kazumasa teaches that it is well known in the art that switching over to lower transmission rates when selected packet length times are associated with transmission rates lower than a current transmission rate (Par.13 and Abstract). In communications systems it is known that by communicating with a lower speed, the receiving accuracy of a modem will improve and can improve the communication efficiency by reducing transmission errors.

To one of ordinary skill in the art, it would have been obvious to modify AAPA with Kazumasa such that, communications is switched over to lower transmission rates when selected packet length times are associated with transmission rates lower than a current transmission rate, to provide a method where by communicating with a lower speed, the receiving accuracy of a modem will improve and can improve the communication efficiency by reducing transmission errors.

11. Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants Admitted Prior Art (10/542219), Odman (U.S. 2003/0210710 A1), and

Brockmann et al (U.S. 2003/0133469 A1) in further view of Kazumasa et al (JP 2003-110575).

Regarding Claim 8 and 17, AAPA, Odman, and Brockmann teaches all the limitations as recited in claim 1, however the combination **does not disclose** switching over to lower transmission rates when selected packet length times are associated with transmission rates lower than a current transmission rate.

Kazumasa teaches that it is well known in the art that switching over to lower transmission rates when selected packet length times are associated with transmission rates lower than a current transmission rate (Par.13 and Abstract). In communications systems it is known that by communicating with a lower speed, the receiving accuracy of a modem will improve and can improve the communication efficiency by reducing transmission errors.

To one of ordinary skill in the art, it would have been obvious to modify AAPA with Kazumasa such that, communications is switched over to lower transmission rates when selected packet length times are associated with transmission rates lower than a current transmission rate, to provide a method where by communicating with a lower speed, the receiving accuracy of a modem will improve and can improve the communication efficiency by reducing transmission errors.

Allowable Subject Matter

12. Claims 4, 9, 13, and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WESLEY L. KIM whose telephone number is (571)272-7867. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George Eng/
Supervisory Patent Examiner, Art Unit 2617

/Wesley L Kim/
Examiner, Art Unit 2617